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# 5

# Fanless Box PCs


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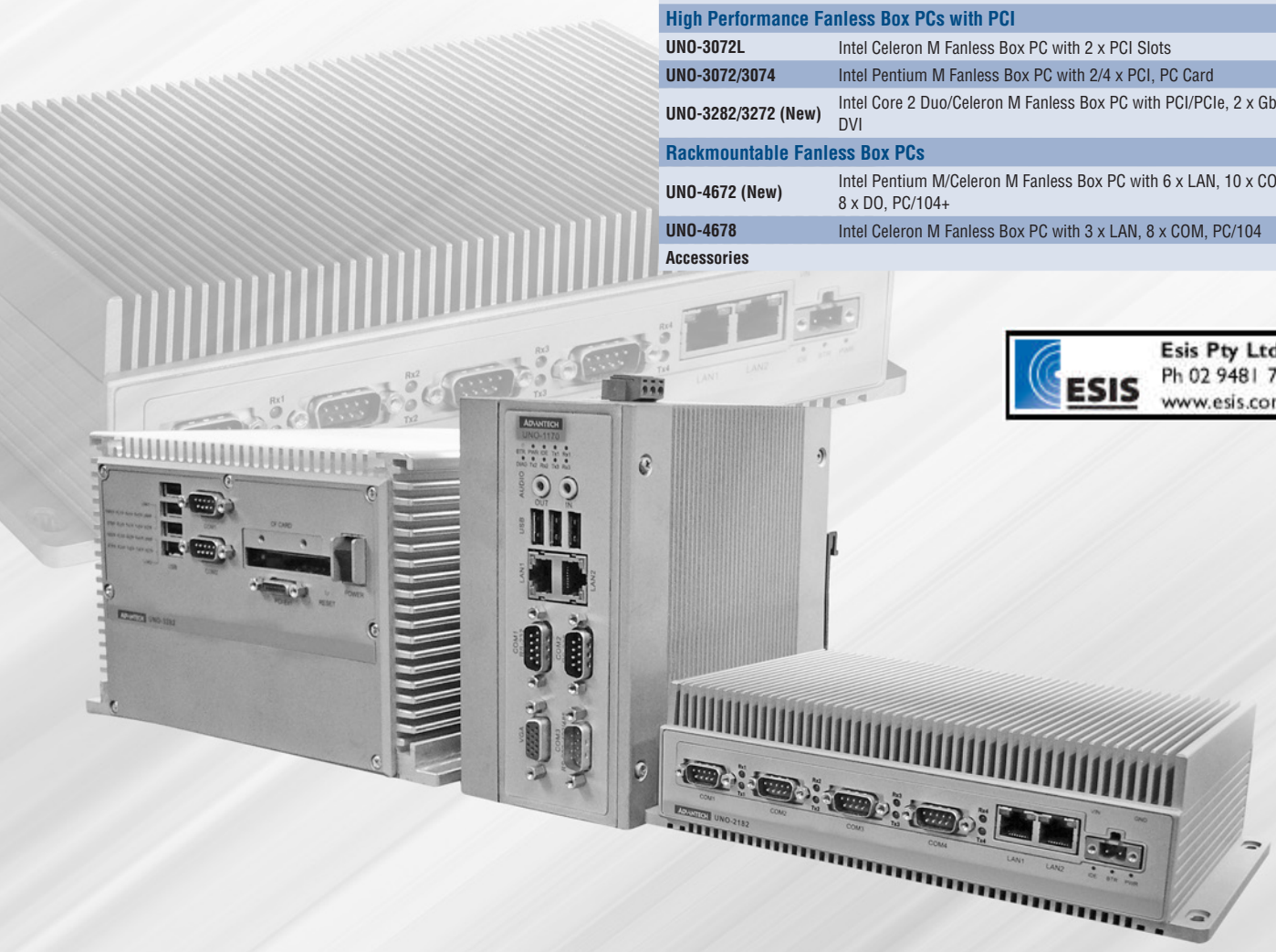

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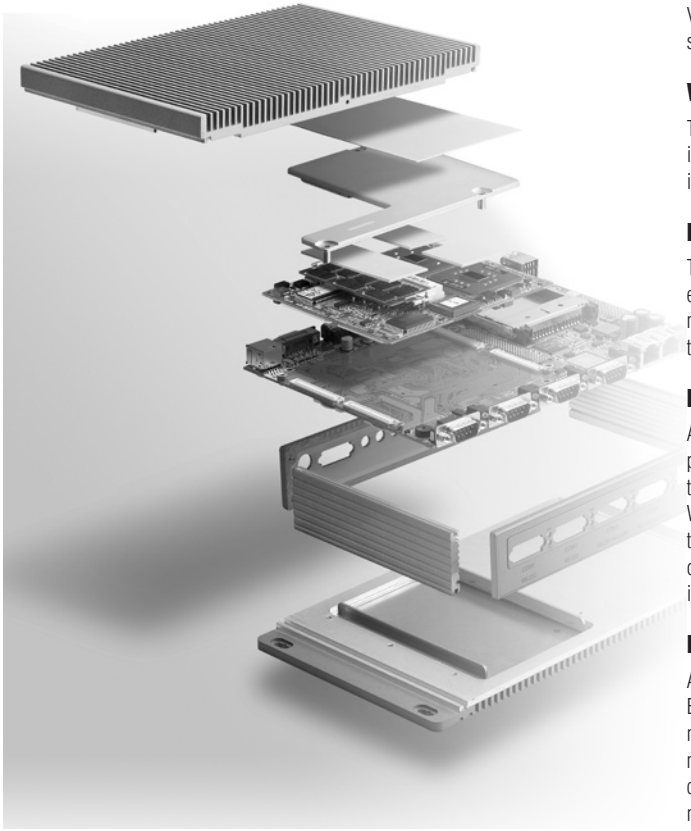
# Fanless Box PC Overview

## Introduction

Advantech's Fanless Box PCs are designed to fulfill the needs of mission critical automation applications. Their embedded design, industrial automation features and advanced computer technology deliver robustness, reliability and flexibility to satisfy customers who are looking for a rugged & compact computing platform with an industrial design and built-in I/O for diverse automation applications.

Leveraging field-approved and worldwide accepted real-time OS technology, Advantech provides Windows CE, Windows XP Embedded and Embedded Linux ready solutions and supports several standard networking interfaces, such as Ethernet, RS-232/422/485, onboard I/O lines, PC cards, CANbus and more. Because of its open architecture, great expansion capability and reliable fanless, cable-less and diskless design, Advantech's Fanless Box PCs are an ideal platform to implement diverse custom applications in power/energy, transportation, machine automation, factory automation, building automation, facility monitoring system, environment monitoring vertical markets.



## Features

### Fanless Design

Advantech's Fanless Box PCs are robust computers without rotating parts, such as a CPU fan, system fan, power supply fan or HDD. This concept significantly increases reliability, extends MTTR, and extremely reduces maintenance efforts. Therefore, you don't need to worry about a CPU cooler or HDD failure issue anymore, even in dusty environments.

### No Internal Cabling

Unlike general Box PC designs where cables are used for wiring between connectors and CPU boards, connectors on Advantech's Fanless Box PCs are soldered directly on the PCB. Therefore, there is no internal cabling inside the chassis. This makes Advantech's Box PCs much more reliable than general Box PC's in harsh environments.

### Industrial-grade Power Design

Advantech's Fanless Box PCs are designed to accept wide DC power input (ex. 9 ~ 36 $V_{DC}$) in factory floors. In addition, they also feature power reversal protection that prevents system damage when power inputs are reversed.

### Wide Operating Temperature Range

This series supports wide operating temperature through selecting low-voltage CPU and industrial-grade components as well as associated thermal design that meets critical industrial-grade applications.

### Battery-backup Memory

To keep critical data alive when system power is lost, Advantech's Fanless Box PCs is equipped with onboard battery-backup memory. Onboard battery supplies power to keep memory operating all the time. In addition, battery-backup memory can also acts as temporary runtime data buffer that helps reduce CF's access times dramatically.

### Ready Embedded OS for Rapid Application Development

Advantech's Fanless Box PCs provide an embedded operating system offering a preconfigured image with optimized onboard device drivers. These Box PCs support the three most popular embedded operating systems: Microsoft Windows CE, Microsoft Windows XP Embedded and Embedded Linux. The embedded operating systems fulfill the toughest requirements of complete functionality and high reliability. This series quickly proves itself to be an application ready platform that will save time and energy in launching your projects.

### Flexible Networking Options

Advantech's Fanless Box PCs support diverse ways to connect to a network, including Ethernet, Wireless LAN and Modems. Their built-in Ethernet port provides high-speed networking capability up to 1 Gbps. The PCMCIA expansion with WLAN/3G/GPRS/GSM module offers you a mobile and scalable network without incurring additional cabling costs. And through their serial ports, industrial modems offer the most popular and easiest networking way thru PSTN.

# Embedded OS Introduction and Driver Support

## Embedded OS Introduction

Advantech's Fanless Box PCs provide an embedded operating system solution offering a pre-configured image with optimized onboard device drivers. Advantech's Fanless Box PCs support the three most popular operating systems: Windows CE 6.0 R2 Windows XP Embedded SP2 Rollup 1.0 and Embedded Linux. These operating system fulfill the toughest requirements of complete functionality, high reliability, minimized cost and low power consumption. These Fanless Box PCs quickly prove themselves to be an application-ready platform that saves time and energy in launching projects.

### Real-Time Windows CE Meets Time-critical Demands

Windows CE, published by Microsoft, is a robust, compact and highly efficient "hard" real-time operating system that quickly satisfies any customized high-performance embedded applications. It also provides enterprise-scale protection with demanding network security mechanisms, including Kerberos Security Protocol, Extensible Authentication Protocol, Secure Sockets Layer (SSL) and so on. Furthermore, Windows CE supports the latest stack network standard, IPv6 that provides more IP addresses than the previous standard, IPv4. Windows CE possesses robust core OS services and complete networking services to offer users an ideal embedded development platform.

### WinXPe Provides Applications Compatible to Windows XP

Windows XP Embedded is a componentized version of Windows XP Professional, which is based on Windows XP Professional binaries and features the latest multimedia (Windows Media Player 11, DirectX 9.0c), browsing (Internet Explorer 7.0) technologies, security, Remote Desktop Protocol 6.0 and File-Based Write Filter (EWF). You can seamlessly integrate specific applications into Windows XP Embedded with minimum effort.

### Open Source Embedded Linux Offers a Cost-effective Alternative

Embedded Linux is a famous, UNIX compatible, open source embedded operating system which ports the Linux kernel to a specific CPU and board installed into the embedded device. Advantech offers Embedded Linux installation CD for x86-based products and supports Fedora Core 4 and RedHat 9.0 kernels. In the Embedded Linux, it features X Windows, browsing (Dillo), PDF viewer (XPDF), FTP (GFTP), IPv6 and software management (RedHat Package Manager) in 50MB image size.

### Driver Packages Provided for Popular Linux Distributions

Customers can install standard Linux distributions on UNO series Fanless Box PCs, and Advantech provides drivers for much of the hardware, with supported distributions and version listed below:

- Debian 3.1r0, 4.0
- Fedora Core 3, 4, 5, 6, 7, 8, 9
- Mandrake 10.1
- Mandriva 2006, 2008
- opensuse 10.3
- Redhat 9
- RHEL 4, 5
- SuSE 9.2, 9.3, 10.1
- Ubuntu 6.06, 8.04

If your distribution is not on the list, please contact us for further assistance.

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## Windows CE Software Support

| | |
|---|---|
| **Applications and Services Development** | The combined Web and application services of Windows CE provide unsurpassed opportunities to build smart, mobile, and connected devices that have access to Windows operating systems, applications, databases, and the Internet.<br>▪ Active Template Library (ATL)<br>▪ C Libraries and Runtimes<br>▪ Component Services: Component Object Model (COM) and Distributed Component Object Model (DCOM)<br>▪ Device Management<br>▪ Lightweight Directory Access Protocol (LDAP) Client<br>▪ Microsoft Message Queuing (MSMQ)<br>▪ Microsoft Foundation Classes (MFC)<br>▪ Object Exchange Protocol (OBEX)<br>▪ Simple Object Access Protocol (SOAP) Toolkit<br>▪ Microsoft .NET Compact Framework<br>▪ XML |
| **Applications: End User** | Ready-to-use applications perform common tasks based on underlying services, providing rapid application deployment within specific classes of devices, such as mobile handheld devices, data collection devices, and thin clients.<br>▪ Microsoft ActiveSync®<br>▪ CAB File Installer/Uninstaller<br>▪ Help<br>▪ Remote Desktop Connection |
| **Core Operating System Services** | Core operating system services contain data on the Windows CE kernel and other features common to all Windows CE platforms. The core operating system services enable low-level tasks from process threads to memory management, and provide some file system functionality.<br>▪ USB Host Support<br>▪ Kernel Features<br>▪ Real-Time Support<br>▪ Fonts |
| **Communication Services and Networking** | Windows CE provides networking and communications capabilities that enable devices to connect and communicate securely with other devices and people over both wireless and wired networks.<br>▪ Networking Features: Protected Extensible Authentication Protocol (PEAP), firewall, Network Driver Interface Specification (NDIS) 5.1, utilities, Universal Plug & Play (UPnP), TCP/IP, TCP/IPv6<br>▪ Local Area Network (LAN): 802.1x, 802.3, 802.5, Wireless Protected Access<br>▪ Wide Area Network (WAN): dial-up networking, point-to-point, telephony API<br>▪ Servers: File Transfer Protocol (FTP), telnet, Web server, Remote Access Service (RAS) |
| **File Systems and Data Stores** | File systems and data stores enable devices to compress, store, or read data from RAM or ROM and have varying responsibilities from filtering to partitioning.<br>▪ File System<br>▪ Registry Storage |
| **Multimedia and Browsing Services** | The Internet connectivity modules enable you to build sophisticated Internet access devices. Off-the-shelf protocols are available at various levels to provide multiple Internet access options. Windows CE includes the high performance Microsoft DirectX® API and Microsoft Windows Media® technologies found on desktop computers, enabling high-performance audio, video, and streaming media services on Windows CE–based devices.<br>▪ Internet Explorer 6.0 for Windows CE<br>▪ Scripting (Microsoft Jscript® 5.6, VBScript 5.6) |
| **Security** | Security services supported in Windows CE 5.0 help users to connect securely over networks and between specified devices, enabling better protection of personal content and data.<br>Authentication Services<br>▪ Kerberos<br>▪ Secure Socket Layer (SSL)<br><br>Cryptography Services<br>▪ CryptoAPI 1.0 with High Encryption Provider |
| **Shell and User Interface** | Ready-to-use, built-in user interfaces (UI) and UI services can save you considerable time when you want to create the sophisticated, easy-to-use, graphical devices that users demand.<br>▪ Graphics, Windowing, and Events<br>▪ Shell<br>▪ User Interface (customizable UI, software input panel) |

# Fanless Box PC Selection Guide

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| Model Name | UNO-1150 | UNO-1150E | UNO-1170 | UNO-1170E | UNO-2050E | UNO-2053E | UNO-2059E | UNO-2170 | UNO-2171 |
|---|---|---|---|---|---|---|---|---|---|
| CPU | GX2-400 MHz | GX2-400 MHz | Celeron M 1.0 GHz, Pentium M 1.4 | Celeron M 1.0 GHz, Pentium M 1.4 | GX2-400 MHz | | | Celeron M 600 MHz, Celeron M 1.0 GHz | Celeron M 1.0 GHz, Pentium M 1.4 |
| Onboard RAM | 256 MB DDR SDRAM | 256 MD DDR SDRAM | 512 MB/1 GB DDR SDRAM | 512 MB/1 GB DDR SDRAM | 256 MB DDR SDRAM | | | 256 MB/512 MB DDR SDRAM | 512 MB/1 GB DDR SDRAM |
| Battery-Backup SRAM | - | - | 512 KB | 512 KB | - | | | 512 KB | 512 KB |
| Display/Mouse/ Keyboard | VGA | | | | | | | | |
| Audio | Yes | Yes | Yes | Yes | - | Yes | - | - | Yes |
| Serial Ports | 1 × RS-232, 2 x RS-232/422/485 | 1 x RS-232, 2 x RS-232/422/485 | 2 x RS-232, 1 x RS-232/422/485 | 2 x RS-232, 1 x RS-232/422/485 | 2 x RS-232 2 x Isolated RS-232/422/485 | 2 x RS-232 | 2 x RS-232/485 2 x RS-232/422/485 | 2 x RS-232 2 x RS-232/422/485 | 2 x RS-232, 2 x RS-232/422/485 |
| Ethernet Ports | 2 x 10/100Base-T | 2 x 10/100Base-T | 2 x 10/100Base-T | 2 x 10/100Base-T | 2 x 10/100Base-T | 2 x 10/100Base-T | 1 x 10/100Base-T | 2 x 10/100Base-T | 2 x 10/100Base-T |
| USB Ports | Two | Two | Four (One internal) | Four (One internal) | - | Two | Two | Two | Two |
| PC Card Slots | - | - | - | - | - | One | One | One | One |
| Printer Ports | - | - | - | - | - | - | - | One | - |
| PC/104 Expansion | - | PCI-104 | - | PC/104+ | - | - | - | PC/104 | PC/104+ |
| PCIe/PCI Expansion | - | mini PCI | - | mini PCI | - | - | - | - | - |
| Onboard I/O | - | - | - | - | 8-ch isolated DI 8-ch isolated DO | - | - | - | - |
| Watchdog Timer | Yes | | | | | | | | |
| CompactFlash Slots | One internal | One Internal | One internal | One internal | One internal | | | | Two internal |
| 2.5" HDD Expansion | No | Yes | No | Yes | Option | | | Yes | |
| Operating Systems | Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux | Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux | Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux | Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux | Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux | | | | |
| Mounting | DIN-rail/Wall | | | | | | | Wall | |
| Anti-Vibration | 2G w/CF | 2 G w/CF, 0.5 G w/HDD | 2G w/CF | 2G w/CF, 0.5G w/HDD | 2 G w/CF, 1 G w/HDD | | | 2 G w/CF, 0.5 G w/HDD | 2 G w/CF, 1 G w/HDD |
| Anti-Shock | 50 G w/CF | 50 G w/CF, 20 G w/HDD | 50 G w/CF | 50G w/CF, 20G w/HDD | 20 G w/CF @ DIN 50 G w/CF @ Wall/Panel | | | 20 G w/HDD 50 G w/CF | 20 G w/HDD 50 G w/CF |
| Power Input Range | 9 ~ 36 $V_{DC}$ | | | | | | 10 ~ 48 $V_{DC}$ | 9 ~ 36 $V_{DC}$ | 10 ~ 53 $V_{DC}$ |
| Operating Temperature | -10 ~ 60° C (14 ~ 140° F) | -10 ~ 60° C (14 ~ 140° F) | -10 ~ 60° C (14 ~ 140° F) | -10 ~ 60° C (14 ~ 140° F) | -10 ~ 55° C (14 ~ 131° F) | | | -20 ~ 50° C (-4 ~ 122° F) | -20 ~ 65° C (-4 ~ 149° F) |
| Power Consumption Typical | 15 W | 15 W | 24 W | 24 W | 15 W | | | 24 W | 24 W |
| Minimum Power Requirement | 24 W +24 V @ 1 A power input | 24 W +24 V @ 1 A power input | 48 W +24 V @ 2 A power input | 48 W +24 V @ 2 A power input | 24 W, +24 V @ 1 A power input | | | 48 W, +24 V @ 2 A power input | 48 W, +24 V @ 2 A power input |
| Dimensions (W x D x H) | 85 x 155 x 140 mm (3.4" x 6.1" x 5.6") | 110 x 155 x 140 mm (4.4" x 6.1" x 5.6") | 85 x 155 x 140 mm (3.4" x 6.1" x 5.6") | 110 x 155 x 140 mm (4.4" x 6.1" x 5.6") | 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4") | | | 255 x 152 x 50 mm (10" x 6.0" x 2.0") | 255 x 152 x 59 mm (10" x 6.0" x 2.3") |
| Weight | 1.6 KG | 2.0 KG | 1.6 KG | 2.0 KG | 0.8 kg | | | 1.6 kg | 2.4 kg |
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# Selection Guide

| Model Name | UNO-2172 | UNO-2176 | UNO-2182 | UNO-3072L | UNO-3072 | UNO-3074 | UNO-3282/3272 | UNO-4672 | UNO-4678 |
|---|---|---|---|---|---|---|---|---|---|
| CPU | Celeron M 1.5 GHz, Pentium M 1.6 GHz | Celeron M 1.0 GHz, Pentium M 1.4 GHz | Core 2 Duo 1.5 GHz | Celeron M 1.0 GHz, Celeron M 1.5 GHz | Pentium M 1.4 GHz | Pentium M 1.8 GHz | Celeron M 1.86 GHz Core 2 Duo 1.5 GHz | Celeron M 1.0 GHz, Pentium M 1.4 GHz | Celeron M 1 GHz |
| Onboard RAM | 1 GB DDR2 SDRAM | 512 MB DDR SDRAM | 1 GB DDR2 SDRAM | 512 MB/1 GB DDR SDRAM | 1 GB DDR SDRAM | 1 GB DDR SDRAM | 1 GB DDR2 SDRAM | 1 GB DDR2 SDRAM | 512 MB DDR SDRAM |
| Battery-Backup RAM | 512 KB | 512 KB | 512 KB | - | 512 KB | | | 512 KB | - |
| Display/Mouse/ Keyboard | DVI-I | VGA | DVI-I | VGA | | | VGA+ DVI-D | VGA | VGA |
| Audio | Yes | - | Yes | - | - | - | Yes | - | - |
| Serial Ports | 2 x RS-232, 2 x RS-232/422/485 | 2 x RS-232, 4 x Isolated RS-232/422/485 | 2 x RS-232, 2 x RS-232/422/485 | 2 x RS-232, 2 x RS-232/422/485 | | | | 2 x Isolation RS-232, 8 x Isolated RS-232/422/485 | 2 x isolated RS-232, 6 x isolated RS-232/422/485 |
| Ethernet Ports | 2 x 10/100/1000Base-T | 2 x 10/100Base-T | 2 x 10/100/1000Base-T | 2 x 10/100Base-T | | | 2 x 10/100/ 1000Base-T | 2 x 10/100/1000Base-T 4 x 10/100Base-T | 3 x 10/100Base-T |
| USB Ports | Two | Two | Two | Four | | | Five (One internal) | Four (one internal) | Two |
| PC Card Slots | One | - | One | - | One | | - | - | - |
| Printer Ports | - | | | | | | | | |
| PC/104 Expansion | PCI-104 | PC/104 | PCI-104 | - | | | - | PC/104+ | PC/104 |
| PCIe/PCI Expansion | - | | | Two PCI | | Four PCI | One PCI + One PCIe x 1 or Two x PCI | - | - |
| Onboard I/O | - | 8-ch Isolated DI 8-ch Isolated DO | - | 4-ch isolated DI, 4-ch isolated DO | | | - | 8-ch Isolated DI 8-ch Isolated DO | - |
| Watchdog Timer | Yes | | | | | | | | |
| CompactFlash Slots | One internal | One internal | One internal | One internal | One internal, One external | | One internal, One external | Two internal | One internal |
| 2.5" HDD Expansion | Yes | | | | | | | | |
| Operating Systems | Windows XP Embedded, Windows 2000/XP | Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux | Windows XP Embedded, Windows 2000/XP | Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux | | | Windows XP Embedded, Windows 2000/XP/Vista, Linux | Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux | Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux |
| Mounting | Wall | | | Wall/Panel/Stand | | | Wall/Stand | Rack Mount | Rack Mount |
| Anti-Vibration | 2 G w/CF, 1 G w/HDD | | | | | | | | |
| Anti-Shock | 20 G w/HDD 50 G w/CF | | | | | | 20 G w/HDD 50 G w/CF | 20 G w/HDD 50 G w/CF | 20 G w/HDD 50 G w/CF |
| Power Input Range | 9 ~ 36 $V_{DC}$ | | | 16 ~ 36 $V_{DC}$ | | 20 ~ 36 $V_{DC}$ | 9 ~ 36 $V_{DC}$ | AC : 90 ~ 250 $V_{AC}$ DC : 106 ~ 250 $V_{DC}$ | 9 ~ 36 $V_{DC}$ |
| Operating Temperature | -20 ~ 50° C (-4 ~ 122° F) | -20 ~ 65° C (-4 ~ 149° F) | -20 ~ 60° C (-4 ~ 140° F) | -20 ~ 60° C (-4 ~ 140° F) | -20 ~ 55° C (-4 ~ 131° F) | | UNO-3282 -20 ~ 60° C (-4 ~ 140° F) UNO-3272 -20 ~ 50° C (-4 ~ 122° F) | -20 ~ 55° C (-4 ~ 131° F) | -10 ~ 55° C (14 ~ 131° F) |
| Power Consumption Typical | 45 W | 24 W | 35 W | 24 W | | | 100 W | 45 W | 24 W (typical) |
| Power Requirement | 48 W, +24 V @ 2 A power input | | | | | 96 W, +24 V @ 4 A power input | 120 W +24 V @ 5 A power input | 90-250 $V_{AC}$ 47-400 Hz 1.6-0.8 A or 106-250 $V_{DC}$ 1.6-0.8A | 48 W +24 V @ 2 A power input |
| Dimensions (W x D x H) | 255 x 152 x 69 mm (10" x 6.0" x 2.7") | 255 x 152 x 59 mm (10" x 6.0" x 2.3") | 255 x 152 x 69 mm (10" x 6.0" x 2.7") | 140 x 237 x 179 mm/ 153 x 237 x 179 mm (5.5" x 9.3" x 7.0"/ 6" x 9.3" x 7.0") | 140 x 237 x 179 mm (5.5" x 9.3" x 7.0") | 180 x 237 x 177 mm/ 193 x 237x 177 mm (7.1" x 9.3" x 7.0"/ 7.6" x 9.3" x 7.0") | 200 x 240 x 130 mm (7.9" x 9.4" x 5") | 440 x 220 x 88 mm (17.3" x 8.6" x 3.4") | 440 x 220 x 44 mm (17.3" x 8.6" x 1.7") |
| Weight | 3 kg | 2.4 kg | 3 kg | 4.2 kg/6 kg | 4.4 kg | 5.0 kg/6.0 kg | 5.5 kg | 6.0 kg | 3.6 kg |
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# UNO-1150/E

## AMD Geode GX Fanless Box PC with 2 x LAN, 3 x COM, PCI-104

## Features

- Onboard AMD Geode GX 533 (400 MHz) CPU
- One RS-232 and two RS-232/422/485 ports with automatic flow control.
- Two 10/100Base-T RJ-45 ports
- Two USB, audio and internal CompactFlash®
- Compact size, small foot print, saves space and front accessible for easy wiring
- DIN-rail design for easy installation in field cabinet
- Wide operating temperature range
- Windows® CE 6.0, Windows XP Embedded, and Linux ready solution
- Onboard system & I/O LED indicators
- Fanless desing with no intemal cabling

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## Introduction

UNO-1150 is an DIN-rail Mounted Fanless Box PC, which provides several serial communication ports and Ethernet interfaces, with a compact size, small foot print, and help to saves space and its front accessible is very convenient for wiring and DIN-rail design for easy installation in field cabinet. With rich OS and driver supports, such as Windows XP embedded, WinCE 6.0, and even embedded Linux. You can integrate your applications easily with an application ready platform that can provide a versatile function to fulfill diverse requirements.

## Specifications

### General

- **Certification** CE, FCC Class A, UL, CCC
- **Dimension (W x H x D)** 85 x 155 x 140 mm (3.4" x 6.1" x 5.6") (UNO-1150)
  110 x 155 x 140 mm (4.4" x 6.1" x 5.6") (UNO-1150E)
- **Enclosure** Aluminum + SECC
- **Mounting** DIN-rail, Wallmount
- **Power Consumption** 15 W (Typical)
- **Power Requirement** 9 ~ 36 $V_{DC}$ (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 1.6 KG
- **OS Support** Windows XP Embedded, Windows 2000 & XP, Windows CE 6.0, Linux

### System Hardware

- **CPU** AMD Geode GX 533 (400 MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for Power, IDE, LAN (Active, Status) and Serial (Tx, Rx)
  Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: 2.5" SATA HDD bracket (Only for UNO-1150E)
- **PC/104 Slot** PCI-104 slot, supports 3.3 V & +5 V (Only for UNO-1150E)
- **Mini PCI** 1x MiniPCI (UNO-1150E only)
- **Display** DB15 VGA connector, supports up to 1024 x 768 @ 60 Hz
- **Audio** Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Serial Ports** 1 x RS-232, 2 x RS-232/422/485 with DB9 connectors, Automatic RS-485 data flow control
  RS-232/422/485 ports support hardware 128 byte FIFO
- **Serial Port Speed** For RS-232 port: 50 ~ 115.2 kbps
  For RS-232/422/485 port: RS-232, 300 ~ 115.2 kbps
  For RS-232/422/485 port: RS-422/485, 300 ~ 921.6 kbps
- **LAN** 2 x 10/100 Base-T RJ-45 ports
- **USB** 2 x USB, OpenHCI, Rev. 1.1 compliant

### Environment

- **Operating Temperature** -10 ~ 60° C (14 ~ 140° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms (UNO-1150E)
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 2 Grms @ 5 ~ 500 Hz
  HDD: 0.5 Grms @ 5 ~ 500 Hz (UNO-1150E)

## Ordering Information

- **UNO-1150-G20E** GX2 400 MHz, 256 MB RAM Fanless Box PC
- **UNO-1150E-G20E** GX2 400 MHz, 256 MB, Fanless Box PC w/PCI-104

### Accessories

- **UNO-FPM11-AE** UNO-1100 series VESA mount kit

# UNO-1170/E

## Intel® Pentium® M/Celeron® M Fanless Box PC with 2 x LAN, 3 x COM, 4 x USB, PC/104+

## Features

- Onboard Celeron® M 1.0 GHz or Pentium® M 1.4 GHz
- Onboard 512 KB battery-backup SRAM
- Onboard system & I/O LED indicators
- Two RS-232 and one RS-232/422/485 ports with automatic flow control
- Two 10/100Base-T RJ-45 ports
- 3 x external USB and 1 x internal USB for dongle and flash drive
- PC/104+ expansion slots option
- DIN-rail design for easy installation in field cabinet
- Wide temperature operation
- Windows® CE 6.0, Windows XP Embedded, and Linux ready solution
- Supports Boot from LAN function
- Fanless design with no internal cabling

Esis Pty Ltd
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## Introduction

UNO-1170(E) is an DIN-rail based Fanless Box PC, which provides several serial communication ports and Ethernet interfaces, with a compact size, small foot print, and help to saves space and its front accessible is very convenient for wiring and DIN-rail design for easy installation in field cabinet. With rich OS and driver supports, such as Windows XP embedded, WinCE 6.0, and even embedded Linux. You can integrate your applications easily with an application ready platform that can provide a versatile function to fulfill diverse requirements.

## Specifications

### General

- **Certification** CE, FCC Class A, UL, CCC
- **Dimension (W x H x D)** 85 x 155 x 140 mm (3.4" x 6.1" x 5.6") (for UNO-1170)
  110 x 155 x 140 mm (4.4" x 6.1" x 5.6") (for UNO-1170E)
- **Enclosure** Aluminum + SECC
- **Mounting** DIN-rail, Wallmount
- **Power Consumption** 24 W (Typical)
- **Power Requirement** 10 ~ 36 $V_{DC}$ (e.g +24 V @ 2 A) (Min. 48 W), AT
- **Weight** 1.6 KG (for UNO-1170)
  2.0 KG (for UNO-1170E)
- **OS Support** Windows XP embedded, Windows 2000 & XP, Windows CE 6.0, Linux

### System Hardware

- **CPU** Pentium M 1.4 GHz, Celeron M 1.0 GHz
- **Memory** 512 MB/1 GB DDR SDRAM
- **Battery Backup SRAM** 512 KB
- **Indicators** LEDs for Power, IDE, LAN (Active, Status), Serial (Tx, Rx), Alarm for battery backup SRAM and diagnosis (programmable)
  Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash slot
  HDD: one 2.5" SATA HDD bracket
  (Only for UNO-1170E)
- **PC/104 Slot** PC/104+ slot, supports 3.3 V & +5 V
  (Only for UNO-1170E)
- **Mini PCI** 1x MiniPCI (UNO-1170E only)
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Audio** Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Serial Ports** 2 x RS-232, 1 x RS-232/422/485 with DB9 connectors, Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
  RS-422/485: 50 ~ 921.6 kbps
- **LAN** 2 x 10/100 Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **USB** 4 x USB, EHCI, Rev. 2.0 compliant (1 is for USB dongle and USB flash inside chassis)

### Environment

- **Operating Temperature** -10 ~ 60° C (-4 ~ 140° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms (Only for UNO-1170E)
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
  HDD: 0.5 Grms @ 5 ~ 500 Hz (Only for UNO-1170E)

## Ordering Information

- **UNO-1170-C11E** Celeron M 1 GHz, 512 MB RAM Fanless Box PC
- **UNO-1170E-C11E** Celeron M 1 GHz, 512 MB, Fanless Box PC w/PC/104+
- **UNO-1170-P12E** Pentium M 1.4 GHz, 1 GB RAM Fanless Box PC
- **UNO-1170E-P12E** Pentium M 1.4 GHz, 1 GB, Fanless Box PC w/PC/104+

### Accessories

- **UNO-FPM11-AE** UNO-1100 series VESA mount kit

# UNO-2050E

## AMD Geode GX Fanless Box PC with 2 x LAN, 4 x COM, 8 x DI, 8 x DO

## Features

- Onboard AMD Geode GX533 (400 MHz) CPU
- Two RS-232 and two isolated RS-232/422/485 with automatic flow control
- Two 10/100 Base-T RJ-45 ports
- 8-ch Isolated DI and 8-ch Isolated DO with counter and timer
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling

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## Introduction

UNO-2050E is an X86-grade platform with dual LAN and 16-channel isolated digital I/O and timer/counter. In addition, it also provides two RS-232 and two isolated RS-232/422/485 communication ports with RS-485 automatic flow control functionality. Therefore, the UNO-2050E is an ideal solution for embedded controllers.

UNO-2050E is available with a pre-configured Windows CE image with optimized onboard device drivers. Microsoft Windows CE is a compact, highly efficient, real-time operating system designed for embedded systems without mechanical HDD limitations. To expand storage capability, the UNO-2050E allows the addition of an external 2.5" HDD using Advantech's HDD expansion kit. It can be used for large data backup requirements and popular OS installations such as Microsoft Windows and Linux OS. Significant anti-vibration (1G w/HDD) is maintained even with the mechanical HDD inside. UNO-2050E is the perfect embedded application ready platform that can shorten development time and offer a rich networking interface to fulfill diverse application requirements.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")
- **Enclosure** Aluminum
- **Mounting** Wallmount, DIN-rail
- **Power Consumption** 15 W (Typical)
- **Power Requirements** 9 ~ 36 $V_{DC}$ (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 0.8 kg
- **OS Support** Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0 & 6.0, Linux

### System Hardware

- **CPU** AMD Geode GX533 (400 MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for Power, IDE, Diagnosis (programmable) and LAN (Active, Status)
  Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: expansion kit for 2.5" IDE HDD (Optional)
- **Display** DB15 VGA connector, 1024 x 768 @ 60 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Counter/Timer** 2 x 16-bit: counter source: DI6 & DI7, Pulse output: DO6 & DO7. Can be cascaded as one 32-bit counter/timer, Down counting, preset counting value, interrupt handling, Timer time base: 100/10/1 kHz,100 Hz
- **Digital Inputs** 8 ch. wet contact 2,000 $V_{DC}$ isolation, 2,000 $V_{DC}$ ESD protection, 70 $V_{DC}$ over-voltage protection
  0 ~ 50 $V_{DC}$ input range and 10 kHz speed; Interrupt handling
- **Digital Outputs** 8 ch. 2,000 $V_{DC}$ isolation and 200 mA max/channel sink current. Keeps output status after system hot reset.
  5 ~ 40 $V_{DC}$ output range and 10 kHz speed
- **LAN** 2 x 10/100Base-T with RJ-45 port
- **Serial Ports** 2 x standard RS-232 (COM1/COM2)
  2 x isolated RS-232/422/485 (COM3/COM4)
  Automatic RS-485 data flow control
  RS-232/422/485 (COM3/COM4) with 2000 $V_{DC}$ (EFT) surge protection & 2000 $V_{DC}$ isolation
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps (COM1/COM2)
  50 ~ 230.4 kbps (COM3/COM4)
  RS-422/485: 50 ~ 921.6 kbps (Max.)

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** -10 ~ 55° (14 ~ 131° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 20 G @ DIN, half sine, 11 ms,
  50 G @ Wall/Panel, half sine, 11 ms
- **Vibration Protection** IEC 68 2-6
  CompactFlash: 2 Grms @ sine, 5 ~ 500 Hz,
  1 Oct./min, 1hr/axis.
  HDD: 1 Grms @ sine, 12 ~ 300 Hz, 1 Oct./min,
  1hr/axis.

## Ordering Information

- **UNO-2050E-IDA0E** GX2 400 MHz, 256 MB RAM Fanless Box PC

### Accessories

- **UNO-HD20-AE** UNO-2000 HDD expansion kit
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

# UNO-2053E

## AMD Geode GX Fanless Box PC with 2 x LAN, 2 x COM, Audio, PC Card

## Features

- Onboard AMD Geode GX533 (400 MHz) CPU
- Two standard RS-232 and one DB-15 VGA connector
- Two 10/100Base-T RJ-45 ports
- Two USB and one type I/II PC card slot
- Audio with Mic in, Line in, Line out
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling

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## Introduction

The Advantech UNO-2053E is a X86-grade platform that offers dual LAN, dual USB and PC card interfaces to fulfill user's diverse communication needs. In addition, it also offers two RS-232 communication ports on board. Therefore, the UNO-2053E is an ideal solution for data gateway applications. UNO-2053E is available with a pre-configured Windows CE image with optimized onboard device drivers. Microsoft Windows CE is a compact, highly efficient, real-time operating system designed for embedded systems without mechanical HDD limitations.

To expand storage capability, the UNO-2053E allows the addition of an external 2.5" HDD using Advantech's UNO HDD expansion kit. It can be used for large data backup requirements and popular OS installations such as Microsoft Windows and Linux OS. Significant anti-vibration is maintained even with the mechanical HDD inside. (1 G)

UNO-2053E is a perfect embedded application-ready platform that can shorten your development time and offer a rich networking interface to fulfill diverse requirements.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")
- **Enclosure** Aluminum
- **Mounting** Wallmount, DIN-rail
- **Power Consumption** 15 W (Typical)
- **Power Requirements** 9 ~ 36 $V_{DC}$ (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 0.8 kg
- **OS Support** Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0 & 6.0, Linux

### System Hardware

- **CPU** AMD Geode GX533 (400 MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: expansion kit for 2.5" IDE HDD (Option)
- **Display** DB15 VGA connector, 1024 x 768 @ 60 Hz
- **Audio** Mic in, Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **LAN** 2 x 10/100Base-T RJ-45 ports
- **PC Card** 1 x PC Card slot
  Supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) Card
  Supports +5 V, +3.3 V and +12 V @ 120 mA working power
- **Serial Ports** 2 x standard RS-232
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
- **USB Ports** 2 x USB ports, USB OpenHCI, Rev. 1.1 compliant

### Environment

- **Humidity** 95 % @ 40°C (non-condensing)
- **Ingress Protection** IP40
- **Operating Temperature** -10 ~ 55° C (14 ~ 131° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 20 G @ DIN, half sine, 11 ms,
  50 G @ Wall/Panel, half sine, 11 ms
- **Vibration Protection** IEC 68 2-6
  CompactFlash: 2 Grms @ sine, 5 ~ 500 Hz,
  10 ct./min, 1hr/axis
  HDD: 1 Grms @ sine, 12 ~ 300 Hz, 10 ct./min,
  1hr/axis

## Ordering Information

- **UNO-2053E-IDA0E** GX2 400 MHz, 256 MB RAM Fanless Box PC

### Accessories

- **UNO-HD20-AE** UNO-2000 HDD expansion kit
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

# UNO-2059E

## AMD Geode GX Fanless Box PC with 4 x COM, LAN, PC Card

## Features

- Onboard AMD Geode GX533 (400 MHz) CPU
- 2 x RS-232/485, 2 x RS-232/422/485 with automatic flow control
- 1 x 10/100Base-T RJ-45 port
- 2 x USB ports and 1 x type I/II PC card
- One programmable diagnostic LED and buzzer
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling

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## Introduction

Advantech's UNO-2059E is an X86-grade platform that offers USB and PC card interfaces to fulfill I/O device expansion needs. In addition, it also offers two RS-232/485 and two RS-232/422/485 communication ports with automatic flow control functionality. The UNO-2059E is an ideal compact solution for large computing and communication requirements.

UNO-2059E is available with a pre-configured Windows CE image with optimized onboard device drivers. Microsoft Windows CE is a compact, highly efficient, real-time operating system designed for embedded systems without mechanical HDD limitations. To expand storage capability, the UNO-2059E allows the addition of an external 2.5" HDD using Advantech's HDD expansion kit. It can be used for large data backup requirements and popular OS installations such as Microsoft Windows and Linux OS. Significant anti-vibration (1G w/HDD) is maintained even with the mechanical HDD inside.

## Specifications

### General

- **Certifications** CE, FCC class A
- **Dimensions (W x D x H)** 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")
- **Enclosure** Aluminum
- **Mounting** Wallmount, DIN-rail
- **Power Consumption** 15 W (typical)
- **Power Requirements** 10 ~ 48 $V_{DC}$ (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 0.8 kg
- **OS Support** Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0 & 6.0, Linux

### System Hardware

- **CPU** AMD Geode GX533 (400 MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for power, IDE, diagnosis (programmable) and LAN (Active, Status)
  Buzzer for diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: expansion kit for 2.5" IDE HDD (Option)
- **Display** DB15 VGA connector, 1024 x 768 @ 60 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Serial Ports** 2 x RS-232/485, 2 x RS-232/422/485
  - Automatic RS-485 data flow control
  - RS-422/485 surge protection up to 2,000 $V_{DC}$
- **Serial Port Speed** RS-232: 50 ~ 230.4 kbps;
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **USB Ports** 2 x USB ports, OpenHCI, Rev. 1.1 compliant
- **LAN** 1 x 10/100Base-T RJ-45 port
- **PC Card** 1 x PC card slot
  Supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) Card
  Supports +5 V, +3.3 V and 12 V @ 120 mA Power

### Environment

- **Humidity** 95 % @ 40° C (non-condensing)
- **Ingress Protection** IP40
- **Operating Temperature** -10 ~ 55° C (14 ~ 131° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 20 G @ DIN, half sine, 11 ms,
  50 G @ Wall/Panel, half sine, 11 ms
- **Vibration Protection** IEC 68 2-6
  CompactFlash®: 2 Grms @ sine, 5 ~ 500 Hz,
  1 Oct./min, 1hr/axis.
  HDD: 1 Grms @ sine, 12 ~ 300 Hz, 1 Oct./min,
  1 hr/axis.

## Ordering Information

- **UNO-2059E-IDA0E** GX2 400 MHz, 256 MB RAM Fanless Box PC

### Accessories

- **UNO-HD20-AE** UNO-200 HDD expansion kit
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

# UNO-2170

## Intel® Celeron® M Fanless Box PC with 2 x LAN, 4 x COM, PC/104

## Features

- Onboard Celeron® M 600 MHz or Celeron M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- Two RS-232 and two RS-232/422/485 ports with automatic flow control.
- Two 10/100Base-T RJ-45 ports
- Two USB and one type I/II PC card
- PC/104 expansion slots
- Windows® CE 5.0 & 6.0, Windows XP Embedded, and Linux ready solution
- Onboard system status LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling

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## Introduction

UNO-2170 is an Fanless Box PC that supports PC/104 expansion, serial communication ports and several other networking interfaces. UNO-2170 supports Windows XP Embedded OS and Windows CE 5.0 & 6.0, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

## Specifications

### General

| | |
|---|---|
| **Certifications** | CE, FCC class A, UL, CCC |
| **Dimensions (W x D x H)** | 255 x 152 x 50 mm (10" x 6.0" x 2.0") |
| **Enclosure** | Aluminum |
| **Mounting** | Wallmount |
| **Power Consumption** | 24 W (Typical) |
| **Power Requirements** | 9 ~ 36 $V_{DC}$ (e.g +24 V @ 2 A) (Min. 48 W), AT |
| **Weight** | 1.6 kg |
| **OS Support** | Windows XP Embedded, Windows 2000/XP, Windows CE 5.0 & 6.0, Linux |

### System Hardware

| | |
|---|---|
| **CPU** | Celeron M 600 MHz, Celeron M 1.0 GHz |
| **Memory** | 256 MB/512 MB DDR SDRAM |
| **Battery Backup SRAM** | 512 KB |
| **Indicators** | LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx) |
| **Keyboard/Mouse** | 1 x PS/2 |
| **PC Card** | 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card<br>Supports +5, +3.3 and +12 V @ 120 mA working power |
| **PC/104 Slot** | 2 x PC/104 slots (optional). Supports +5 V power |
| **Printer Port** | 1 x printer port |
| **Storage** | SSD: 1 x internal type I/II CompactFlash® slot<br>HDD: Build-in one 2.5" SATA/IDE HDD bracket |
| **Display** | DB15 VGA connector, 1600 x 1200 @ 85 Hz |
| **Watchdog Timer** | Programmable 256 levels timer interval, from 1 to 255 sec |

### I/O Interface

| | |
|---|---|
| **Serial Ports** | 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors<br>Automatic RS-485 data flow control |
| **Serial Port Speed** | RS-232: 50 ~ 115.2 kbps<br>RS-422/485: 50 ~ 921.6 kbps (Max.) |
| **LAN** | 2 x 10/100 Base-T RJ-45 ports (Built-in boot ROM in flash BIOS) |
| **USB Ports** | 2 x USB, EHCI, Rev. 2.0 compliant |

### Environment

| | |
|---|---|
| **Humidity** | 95% @ 40° C (non-condensing) |
| **Operating Temperature** | -20 ~ 50° C (-4 ~ 122° F) @ 5 ~ 85% RH. |
| **Shock Protection** | IEC 68 2-27<br>CompactFlash: 50 G @ wall mount, half sine, 11 ms<br>HDD: 20 G @ wall mount, half sine, 11 ms |
| **Vibration Protection** | IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)<br>CompactFlash: 2 Grms @ 5 ~ 500 Hz,<br>HDD: 0.5 Grms @ 5 ~ 500 Hz |

## Ordering Information

| | |
|---|---|
| **UNO-2170-C00BE** | Celeron M 600 MHz, 256 MB RAM Fanless Box PC |
| **UNO-2170-C11BE** | Celeron M 1 GHz, 512 MB RAM Fanless Box PC |

### Accessories

| | |
|---|---|
| **UNO-PCM21-AE** | 2 x PC/104 expansion kit for UNO-2170 |
| **UNO-FPM21-AE** | UNO-2000 series VESA mount kit |

# UNO-2171

## Intel® Pentium® M/Celeron® M Fanless Box PC with 2 x LAN, 4 x COM, PC/104+

## Features

- Onboard Pentium® M 1.4 GHz or Celeron® M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- Two RS-232 and two RS-232/422/485 ports with automatic flow control
- Two 10/100Base-T RJ-45 ports
- Audio with Mic in, Line in, Line out
- Two USB and one type I/II PC card
- PC/104+ expansion slots
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Onboard system status LED indicators
- Supports Wake on LAN and Boot from LAN function
- Fanless design with no internal cabling

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## Introduction

UNO-2171 is an embedded automation computer that supports PC/104+ expansion, serial communication ports and several other networking interfaces. UNO-2171 supports Windows XP Embedded OS and Windows CE 5.0 & 6.0, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- **Enclosure** Aluminum
- **Mounting** Wallmount
- **Power Consumption** 24 W (Typical)
- **Power Requirements** 10 ~ 53 $V_{DC}$ (e.g +24 V @ 2 A) (Min. 48 W), ATX
- **Weight** 2.4 kg (Typical)
- **OS Support** Windows XP Embedded, Windows 2000/XP, Windows CE 5.0 & 6.0, Linux

### System Hardware

- **CPU** Pentium M 1.4 GHz, Celeron M 1.0 GHz
- **Memory** 512 MB/1 GB DDR SDRAM
- **Battery Backup SRAM** 512 KB
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card
  Supports +5 V, +3.3 V
- **PC/104 Slot** PC/104+ slot, Supports +5 & 3.3 V Power
- **Storage** SSD: 2 x internal type I/II CompactFlash® slot
  HDD: Build-in one 2.5" SATA/IDE HDD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Audio** Mic in, Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100Base-T RJ-45 ports (supports wake on LAN and built-in boot ROM in flash BIOS)
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** -20 ~ 65° C (-4 ~149° F) @ 5 ~ 85% RH
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz,
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-2171-C11BE** Celeron M 1 GHz, 512 MB RAM Fanless Box PC
- **UNO-2171-P12BE** Pentium M 1.4 GHz, 1 GB RAM Fanless Box PC

### Accessories

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

# UNO-2172

## Intel® Pentium® M/Celeron® M Fanless Box PC with 2 x GbE, 4 x COM, DVI

## Features

- Onboard Pentium® M 1.6 GHz, Celeron® M 1.5 GHz or Celeron M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- 2 x RS-232 and two RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T Ethernet
- DVI-I supports dual display
- Audio with Mic in, Line in, Line out
- Two USB and one type I/II PC card
- PCI-104 expansion
- Windows® XP Embedded SP2 ready solution
- Supports SATA-1 HDD and external SATA 1.0 devices
- Onboard system status LED indicators
- Supports Wake on LAN and Boot from LAN function
- Fanless design with no internal cabling

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## Introduction

UNO-2172 is a high-performance Pentium grade controller that supports PCI-104 expansion, serial communication ports and several other networking interfaces. UNO-2172 supports Windows XP Embedded OS, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 69 mm (10" x 6.0" x 2.7")
- **Enclosure** Aluminum
- **Mounting** Wallmount
- **Power Consumption** 45 W (Typical)
- **Power Requirements** Min. 48 W (9 ~ 36 $V_{DC}$) (e.g +24 V @ 2 A), ATX
- **Weight** 3 kg
- **OS Support** Windows XP Embedded, Windows 2000/XP, Linux

### System Hardware

- **CPU** Pentium M 1.6 GHz, Celeron M 1.5 GHz
- **Memory** 1 GB DDR2 SDRAM
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Battery Backup SRAM** 512 KB
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card
  Supports +5 V, +3.3 V
- **PC/104 Slot** PCI-104 slot, supports +5 & 3.3 V Power
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: Build-in one 2.5" SATA/IDE HDD bracket
- **Display** DVI-I supports DVI and VGA for dual display
- **Audio** Mic in, Line in, Line out
- **SATA** 1 x internal, 1 x external SATA 1.0
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100/1000Base-T Ethernet (supports wake on LAN and built-in boot ROM in flash BIOS)
  RJ45 ports
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** -20 ~ 50° C (-4 ~ 122° F) @ 5 ~ 85% RH. (for UNO-2172-C22E and UNO-2172-P22E)
  -20 ~ 60° C (-4 ~ 131° F) @ 5 ~ 85% RH. (for UNO-2172-C11E)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz,
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-2172-C22E** Celeron M 1.5 GHz, 1 GB RAM Fanless Box PC
- **UNO-2172-P22E** Pentium M 1.6 GHz, 1 GB RAM Fanless Box PC

### Accessories

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

# UNO-2176

## Intel® Pentium® M/Celeron® M Fanless Box PC with 2 x LAN, 6 x COM, 8 x DI, 8 x DO

## Features

- Onboard Pentium® M 1.4 GHz/Celeron® M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- Two RS-232 and four isolated RS-232/422/485 ports with automatic flow control
- 8-ch Isolated DI and 8-ch Isolated DO with counter and timer
- Two 10/100Base-T RJ-45 ports
- Two USB ports
- PC/104 expansion slots
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Onboard system status LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling

Esis Pty Ltd
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## Introduction

UNO-2176 is an embedded automation computer that supports PC/104 expansion, serial communication ports and several other networking interfaces. UNO-2176 supports Windows XP Embedded OS and Windows CE 5.0 & 6.0, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

## Specifications

### General

| | |
|---|---|
| **Certification** | CE, FCC Class A, UL, CCC |
| **Dimension (W x D x H)** | 255 x 152 x 59 mm (10" x 6.0" x 2.36") |
| **Enclosure** | Aluminum |
| **Mounting** | Wallmount |
| **Power Consumption** | 24 W (Typical) |
| **Power Requirements** | 9 ~ 36 $V_{DC}$ (e.g +24 V @ 2 A) (Min. 48 W), AT |
| **Weight** | 2.4 kg |
| **OS Support** | Windows XP Embedded, Windows 2000/XP, Windows CE 5.0 & 6.0, Linux |

### System Hardware

| | |
|---|---|
| **CPU** | Pentium M 1.4 GHz, Celeron M 1.0 GHz |
| **Memory** | 512 MB DDR SDRAM |
| **Battery Backup SRAM** | 512 KB |
| **Indicators** | LEDs for Power, IDE, Alarm for battery backup SRAM, Diagnosis (programmable), LAN (Active, Status) and Serial (Tx, Rx) |
| **Keyboard/Mouse** | 1 x PS/2 |
| **PC/104 Slot** | PC/104 Supports +5V Power |
| **Storage** | SSD: 1 x internal type I/II CompactFlash® slot<br>HDD: Build-in one 2.5" SATA/IDE HDD bracket |
| **Display** | DB15 VGA connector, 1600 x 1200 @ 85 Hz |
| **Watchdog Timer** | Programmable 256 levels timer interval, from 1 to 255 sec |

### I/O Interface

| | |
|---|---|
| **Serial Ports** | 2 x RS-232<br>2 x isolated RS-232/422/485 with DB9 connectors<br>2 x isolated RS-232/422/485 with 5-pin screw terminal<br>Automatic RS-485 data flow control<br>Isolation protection: 2,000 $V_{DC}$<br>Surge protection: 2,000 $V_{DC}$ (EFT) |
| **Serial Port Speed** | (COM1, COM2) RS-232: 50 ~ 115.2 kbps,<br>(COM3-COM6) RS-232: 300 ~ 115.2 kbps<br>RS-422/485: 300 ~ 921.6 kbps (Max.) |
| **LAN** | 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS) |
| **USB** | 2 x USB, EHCI, Rev. 2.0 compliant |
| **Digital Inputs** | 8-ch wet contact<br>- Logic 0: 0 ~ 3 $V_{DC}$ ; Logic 1: 10 ~ 50 $V_{DC}$<br>- 2,000 $V_{DC}$ isolation<br>- 2,000 $V_{DC}$ ESD protection<br>- 70 $V_{DC}$ over-voltage protection<br>- ±50 $V_{DC}$ input range and 10 kHz speed<br>- Interrupt handling speed: 10 kHz |
| **Digital Outputs** | 8-ch DO<br>- 2,000 $V_{DC}$ isolation and 200 mA max/channel sink current<br>- Keep output status after system hot reset<br>- 5 ~ 40 $V_{DC}$ output range and 10 kHz speed |
| **Timer/Counter** | Timer/Counter<br>- Counter source: DI1 & DI3, Pulse output: DO2 & DO3<br>- Can be cascaded as one 32-bit counter/timer<br>- Down counting, preset counting value<br>- Timer time base: 100 kHz, 10 kHz, 1 kHz, 100 Hz |

### Environment

| | |
|---|---|
| **Humidity** | 95% @ 40° C (non-condensing) |
| **Operating Temperature** | UNO-2176-C11E: -20 ~ 65° C (-4 ~ 149° F) @ 5 ~ 85% RH<br>UNO-2176-P11E: -20 ~ 60° C (-4 ~ 140° F) @ 5 ~ 85% RH |
| **Operating Humidity** | 20 ~ 95% (non-condensing) |
| **Shock Protection** | IEC 68 2-27<br>CompactFlash®: 50 G @ wall mount, half sine, 11 ms<br>HDD: 20 G @ wall mount, half sine, 11 ms |
| **Vibration Protection** | IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)<br>CompactFlash®: 2 Grms @ 5 ~ 500 Hz,<br>HDD: 1 Grms @ 5 ~ 500 Hz |

## Ordering Information

| | |
|---|---|
| **UNO-2176-C11BE** | Celeron M 1 GHz, 512 MB RAM Fanless Box PC |
| **UNO-2176-P11BE** | Pentium M 1.4 GHz, 512 MB RAM Fanless Box PC |

### Accessories

| | |
|---|---|
| **UNO-PCM22-AE** | 2 x PC/104 expansion kit for UNO-2100 series |
| **UNO-FPM21-AE** | UNO-2000 series VESA mount kit |

# UNO-2182

## Intel® Core™ 2 Duo Fanless Box PC with 2 x GbE, 4 x COM, DVI

## Features

- Onboard Core™ 2 Duo 1.5 GHz (L7400)
- Onboard 512 KB battery-backup SRAM
- 2 x RS-232 and two RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T Ethernet
- DVI-I supports dual display
- Audio with Mic in, Line in, Line out
- Two USB and one type I/II PC card
- PCI-104 expansion
- Windows® XP Embedded SP2 ready solution
- Supports SATA -1 HDD and external eSATA devices
- Onboard system status LED indicators
- Supports Wake on LAN and Boot from LAN function
- Fanless design with no internal cabling

Esis Pty Ltd
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www.esis.com.au

## Introduction

UNO-2182 is a high-performance Core 2 Duo grade controller that supports PCI-104 expansion, serial communication ports and several other networking interfaces. UNO-2182 supports Windows XP Embedded OS, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 69 mm (10" x 6.0" x 2.7")
- **Enclosure** Aluminum
- **Mounting** Wallmount
- **Power Consumption** 35 W (Typical)
- **Power Requirements** Min. 48 W (9 ~ 36 $V_{DC}$) (e.g +24 V @ 2 A), ATX
- **Weight** 3 kg
- **OS Support** Windows XP Embedded, Windows 2000/XP/Vista, Linux

### System Hardware

- **CPU** Core 2 Duo L7400 1.5 GHz
- **Memory** 1 GB DDR2 SDRAM
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Battery Backup SRAM** 512 KB
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card
  Supports +5 V, +3.3 V
- **PC/104 Slot** PCI-104 slot, supports +5 & 3.3V power
- **Storage** SSD: 1 x external type I/II CompactFlash® slot
  HDD: Build-in one 2.5" SATA/IDE HDD bracket
- **Display** DVI-I supports DVI and VGA for dual display
- **Audio** Mic in, Line in, Line out
- **SATA** 1 x internal, 1 x external SATA 1.0
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100/1000Base-T RJ45 ports (supports wake on LAN and built-in boot ROM in flash BIOS)
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** -20 ~ 60° C (-4 ~ 140° F) @ 5 ~ 85% RH.
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz,
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-2182-D12E** Core 2 Duo 1.5 GHz, 1 GB RAM Fanless Box PC

### Accessories

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

# UNO-3072L

## Intel® Celeron® M Fanless Box PC with 2 x PCI Slots

UNO-3072L-C22BE UNO-3072L-C11BE

## Features

- Onboard Celeron® M processor
- Two RS-232 & two RS-232/422/485 ports with RS-485 automatic flow control
- Two 10/100Base-T RJ-45 ports and four USB 2.0 ports
- Two PCI-bus expansion slots for versatile applications
- Industrial proven design; anti-shock up to 50 G, anti-vibration up to 2 G
- 4-ch isolated DI, 4-ch isolated DO with timer, counter and interrupt handling
- Supports dual power inputs
- Windows® 2000/XP and Embedded Linux support
- Windows XP (SP2) Embedded Ready Platforms with write protection (EWF)
- Onboard system & I/O LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling

Esis Pty Ltd
Ph 02 9481 7420
www.esis.com.au

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 140 x 237 x 179 mm (5.5" x 9.3" x 7.0", for UNO-3072L-C11BE)
  153 x 237 x 179 mm (6" x 9.3" x 7.0", for UNO-3072L-C22BE)
- **Enclosure** Aluminum
- **Mounting (Option)** Wall/Panel/Stand
- **Power Consumption** 24 W (typical, no PCI cards)
- **Power Requirements** 9 ~ 36 $V_{DC}$ (e.g. +24 V @ 2 A) (Max. 5A), AT (16 ~ 36 $V_{DC}$ for 12 V PCI boards)
- **Weight (Net)** 4.2 kg/6 kg (UNO-3072L-C11BE/UNO-3072L-C22BE)
- **OS Support** Windows XP embedded, Windows 2000/XP, WinCE 6.0, Linux

### System Hardware

- **CPU** Celeron M 1.0/1.5 GHz
- **Memory** 512 MB/1 GB DDR SDRAM
- **Expansion Slots** 2 x PCI V 2.2
  (Note: The heat dissipation in the PCI cards may affect thermal performance)
- **Indicators** LEDs for power, power input 1, power input 2, power fault, IDE, diagnosis, Programmable buzzer
- **Keyboard/Mouse** 1 x PS/2
- **PCI Slot Power** 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
- **Storage**
  SSD 1 x internal type I/II CompactFlash® slot
  HDD Built-in one 2.5" SATA/IDE HDD Bracket
- **Display** DB15 VGA connector, support to CRT mode: 1600 x 1200 @ 85 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### I/O Interface

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 bps ~ 115.2 kbps
  RS-422/485: 50 bps ~ 921.6 kbps (Max.)
- **USB Ports** 4 x USB, USB EHCI, Rev. 2.0 compliant
- **Digital Inputs (4-ch. wet contact DI0 ~ DI3)**
  - 2,000 $V_{DC}$ isolation
  - 50 ~ 70 $V_{DC}$ over-voltage protection
  - ±50 $V_{DC}$ input range and 10 kHz speed
  - Interrupt handling speed: 10 kHz
- **Digital Outputs (4 ch. DO0 ~ DO3)**
  - 2,000 $V_{DC}$ isolation and 200 mA max/channel sink current
  - Keep output status after system hot reset
  - 0 ~ 40 $V_{DC}$ output range and 10 kHz speed
- **Counters/Timers (2 x 16-bit)**
  - Counter source: DI1 & DI3, Pulse output: DO2 & DO3
  - Can be cascaded as one 32-bit counter/timer
  - Down counting, preset counting value
  - Timer time base: 100 kHz, 10 kHz, 1 kHz, 100 Hz

### Environment

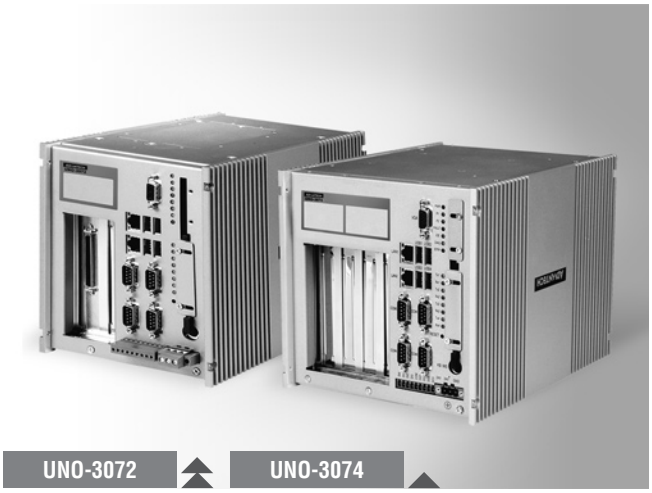
- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature (with CF card)** UNO-3072L-C22BE: -20 ~ 55° C (-4 ~ 131° F)
  UNO-3072L-C11BE: -20 ~ 60° C (-4 ~ 140° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-3072L-C11BE** Celeron M 1.0 GHz, 512 MB RAM Fanless Box PC
- **UNO-3072L-C22BE** Celeron M 1.5 GHz, 1 GB RAM Fanless Box PC

# UNO-3072/3074

## Intel® Pentium® M Fanless Box PC with 2/4 x PCI, PC Card



UNO-3072 UNO-3074

## Features

- Onboard Pentium® M processor
- Onboard 512 KB battery-backup SRAM
- Two RS-232 & two RS-232/422/485 ports with RS-485 automatic flow control
- Two 10/100Base-T RJ-45 ports and four USB 2.0 ports
- Two/ Four PCI-bus expansion slots for versatile applications
- Industrial proven design; anti-shock up to 50 G, anti-vibration up to 2 G
- 4-ch isolated DI, 4-ch isolated DO with timer, counter and interrupt handling
- Supports dual power inputs
- Windows® 2000/XP and Embedded Linux support
- Windows XP (SP2) Embedded ready platforms with write protection (EWF)
- Onboard system & I/O LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling

Esis Pty Ltd
Ph 02 9481 7420
www.esis.com.au

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 140 x 237 x 179 mm (5.5" x 9.3" x 7.0" for UNO-3072)
  193 x 237 x 179 mm (7.6" x 9.3" x 7.0" for UNO-3074)
- **Enclosure** Aluminum
- **Mounting (Option)** Wall/Panel/Stand
- **Power Consumption** 24 W (typical, no PCI cards)
- **Power Requirements** 9 ~ 36 $V_{DC}$ (e.g. +24 V @ 2 A) (Max. 5A),
  AT. (16 ~ 36 $V_{DC}$ for 12 V PCI boards)
- **Weight (Net)** 4.4 kg for UNO-3072-P11E
  7.0 kg for UNO-3074-P32E
- **OS Support** Windows XP embedded, Windows 2000/XP, WinCE 5.0, Linux

### System Hardware

- **CPU** Pentium M 1.4/1.8 GHz
- **Memory** 1 GB DDR SDRAM
- **Battery Backup SRAM** 512 KB
- **Expansion Slots** 2/4 x PCI V 2.2
  (Note: The heat dissipation in the PCI cards may affect thermal performance)
- **Indicators** LEDs for power, power input 1, power input 2, power fault, IDE, diagnosis, 4 COM ports Tx/Rx, and Alarm for battery backup.
  Programmable buzzer.
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC card slot, supports CardBus (Card-32), and 16-bit (PCMCIA 2.1/JEIDA4.2) card supports +5 V, +3.3 V and +12 V @ 120 mA working power
- **PCI Slot Power** 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
- **Storage**
  SSD 1 x internal type I/II CompactFlash® slot
  1 x external type I/II CompactFlash slot
  HDD Built-in 2.5" SATA/IDE HDD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### Communications

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 bps ~ 115.2 kbps
  RS-422/485: 50 bps ~ 921.6 kbps (Max.)
- **USB Ports** 4 x USB, USB EHCI, Rev. 2.0 compliant
- **Digital Inputs (4-ch. wet contact DI0 ~ DI3)**
  - 2,000 $V_{DC}$ isolation
  - 50 ~ 70 $V_{DC}$ over-voltage protection
  - ±50 $V_{DC}$ input range and 10 kHz speed
  - Interrupt handling speed: 10 kHz
- **Digital Outputs (4 ch. DO0 ~ DO3)**
  - 2,000 $V_{DC}$ isolation and 200 mA max/channel sink current
  - Keep output status after system hot reset
  - 0 ~ 40 $V_{DC}$ output range and 10 kHz speed
- **Counters/Timers (2 x 16-bit)**
  - Counter source: DI1 & DI3, Pulse output: DO2 & DO3
  - Can be cascaded as one 32-bit counter/timer
  - Down counting, preset counting value
  - Timer time base: 100 kHz, 10 kHz, 1 kHz, 100 Hz

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature (with CF card)** -20 ~ 55° C (-4 ~ 131° F) @ 5 ~ 85% RH
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-3072-P12BE** Pentium M 1.4 GHz, 1 GB RAM Fanless Box PC
- **UNO-3074-P32BE** Pentium M 1.8 GHz, 1 GB RAM Fanless Box PC

# UNO-3282/3272

## Intel® Core™ 2 Duo/Celeron® M Fanless Box PC with PCI/PCIe, 2 x GbE, 4 x COM, DVI

NEW

## Features

- Onboard Core 2 Duo 1.5 GHZ/Celeron M 1.86 GHz processor
- Onboard 512 KB Battery-backup SRAM
- 2 x RS-232 and 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T Ethernet ports
- One PCIe x 1 plus One PCI or Two PCI expansion slot for versatile applications
- Supports line-in and line-out with audio interface
- Both DVI-D and VGA displays to support dual display output
- Windows® XP Embedded ready solution
- Onboard system & I/O LED indicators
- Supports Wake on LAN and Boot from LAN function
- Fanless design with no internal cabling

Esis Pty Ltd
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## Introduction

Advantech's UNO-3200 series is high-performance Core 2 Duo Fanless Box PC with two PCI expansion or PCIe x 1 plus PCI slots. UNO-3200 features a rugged design with Gigabit LAN and battery backup SRAM. Different from general industrial PCs, UNO-3200 series is more compact and reliable with a fanless, cableless and diskless design. They are open platforms which can fulfill any demanding requirement from the industrial field, and it is an ideal solution for industrial automation and control. UNO-3200 series provide embedded operating system with a pre-configured image that has optimized onboard device drivers, and supports Windows XP Embedded to fulfill the toughest requirements for complete functionality and high reliability.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 200 x 240 x 130 mm (7.9" x 9.4" x 5")
- **Enclosure** Alumium
- **Mounting** Wall/Desktop
- **Power Consumption** 100 W
- **Power Requirements** 9 ~ 36 $V_{DC}$ (e.g +24 V @ 5 A), ATX
- **Weight** 5.5 kg
- **OS Support** Windows XP Embedded, Windows 2000/XP/ Vista, Linux

### System Hardware

- **CPU** Intel Core 2 Duo L7400 1.5 GHz, Celeron M 440 1.86 GHz
- **Memory** 1GB DDR2 SDRAM
- **Battery Backup SRAM** 512 KB
- **Indicators** LED for Power, Power Standby, HDD LED; 4 COM ports Tx/Rx, 2 LAN ports Tx/Rx, 4 user define LED and alarm for BatteryBackup
- **Keyboard/Mouse** 2 x PS/2 connector for Keyboard & Mouse
- **Audio** Line in, Line out
- **Expansion Slots** One PCIe x 1 + one PCI Replacable 2 x PCI V2.2 viser board included
  (Note: The heat dissipation in the PCI cards may affect thermal performance)
- **PCI/PCIe Slot Power** PCI: 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
  PCIe: 12 V @ 2.5 A, +3.3 V @ 3 A
- **Storage**
  SSD: 1 x Internal type I/II CompactFlash® slot
  1 x External type I/II CompactFlash slot
  HDD: Two built-in 2.5" SATA/IDE HDD brackets
- **Display** Supports up to 1600 x 1200 @ 85 Hz
  VGA + DVI-D, support dual display
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

### Communication

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100/1000Base-T RJ-45 ports (Intel 82573L chip, supports Wake On LAN function and built-in boot ROM in flash BIOS)
- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50bps ~ 115.2 kbps
  RS-422/485: 50bps ~ 921.6 kbps (Max)
- **USB** 5 x USB, USB EHCI, Rev. 2.0 compliant (1 is for USB dongle and USB flash inside chassis)

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature (With CF Card)** UNO-3282-D12E: -20 ~ 60° C (-4 ~ 140° F)
  UNO-3272-C32E: -20 ~ 50° C (-4 ~ 122° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis)
  CompactFlash: 5 Grms @ 5 ~ 500 Hz
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-3282-D12E** Core 2 Duo 1.5 GHz, 1 GB RAM Fanless Box PC
- **UNO-3272-C32E** Celeron M 1.86 GHz, 1 GB RAM Fanless Box PC

# UNO-4672

## Intel® Pentium® M/Celeron® M Fanless Box PC with 6 x LAN, 10 x COM, 8 x DI, 8 x DO, PC/104+

NEW

## Features

- Onboard Celeron M 1 GHz or Pentium M 1.4 GHz processor
- 2 x RS-232 and 8x RS-232/422/485 isolated serial ports with automatic flow control and 128KB FIFO
- 2 x 10/100/1000 Base-T (supports teaming function) and 4 x 10/100 Base-T
- Supports 2 x internal CF card and 1 x 2.5" SATA HDD
- PC/104+ extension and 4 x USB 2.0 (1 x internal)
- Rear wiring, rich system & I/O LED status indicators
- Windows® CE 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling

Esis Pty Ltd
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## Introduction

UNO-4672 has been designed to be compliant with IEC-61850-3, which has been defined as an international standard of communication network and system in power substations. Featuring a fanless design with built-in isolated PSU and ten isolated serial communication ports, UNO-4672 is even suitable for any harsh applications. The rear IO connection and LEDs on front panel for all ports and modes highly simplify monitoring for operation and maintenance.

## Specifications

### General

- **Certifications** IEC-61850-3, CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 2U (440 x 220 x 88) mm (17.3" x 8.6" x 3.4")
- **Enclosure** SECC
- **Mounting** Rack mount
- **Power Consumption** 45W (Typical)
- **Power Requirements** AC : 90 ~ 250 $V_{AC}$ (47 ~ 400 Hz)
  DC : 106 ~ 250 $V_{DC}$
  With isolation protection, AT
- **Weight** 6.0 kg
- **OS Support** Windows® XP Embedded, Windows 2000/XP, Windows CE 6.0, Linux

### System Hardware

- **CPU** Pentium M 1.4 GHz, Celeron M 1.0 GHz
- **Memory** 1 GB DDR DRAM
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, Diagnosis (programmable), LAN (Active, Status) and Serial (Tx, Rx)
- **Storage**
  SSD 2x internal
  HDD Build-in one 2.5" SATA HDD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **PC/104 Slot** PC/104+ supports +3.3 V & +5 V power
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec
- **Battery Backup SRAM** 512 KB

### I/O Interface

- **Serial Ports** 2 x DB-9 RS-232 & 8 x screw terminals with 5-wired RS-232/422/485
  Automatic RS-485 data flow control
  2000 $V_{DC}$ surge protection & 2000 $V_{DC}$ isolation
- **Serial Port Speed** (COM1, COM2) RS-232: 50 ~ 115.2 kbps,
  (COM3 ~ COM10) RS-232: 50 ~ 230.4 kbps
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100/1000Base-T RJ-45 ports
  4 x 10/100Base-T RJ-45 ports
- **USB Ports** 4 x USB, UHCI, Rev. 2.0 compliant
  1 x Front, 2 x Rear and 1 x Internal ports
- **Digital Inputs** 8-ch wet contact
  Logic 0: 0 ~ 3 $V_{DC}$; Logic 1: 10 ~ 50 $V_{DC}$
  2,000 $V_{DC}$ isolation, 2,000 $V_{DC}$ ESD protection and 70 $V_{DC}$ over-voltage protection
  Interrupt handling: IRQ 7
  photo couple response: 100 µs
- **Digital Outputs** 8-ch DO
  2,000 $V_{DC}$ isolation and 200 mA max/channel sink current
  Keep output status after system hot reset
  5 ~ 40 $V_{DC}$ output range and 10 kHz speed

### Timer/Counter

- **Counter Source** DI1 & DI3
- **Pulse Output** DO2 & DO3
- **Can be cascaded as one 32-bit counter/timer**
- **Down counting, preset counting value**
- **Timer Time Base** 100 kHz, 10 kHz, 1 kHz, 100 Hz

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** -20 ~ 55° C (-4 ~ 131° F) @ 5 ~ 85%
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Shock Protection** IEC 68 2-27 CompactFlash®: 50 G half sine, 11 ms
  HDD: 20 G half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
  HDD: 1 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-4672-C12E** Celeron M 1 GHz, 1 GB RAM Fanless Box PC
- **UNO-4672-P12E** Pentium M 1.4 GHz, 1 GB RAM Fanless Box PC

# UNO-4678

## Intel® Celeron® M Fanless Box PC with 3 x LAN, 8 x COM, PC/104

## Features

- Onboard Celeron® M 1 GHz processor and 512 MB Memory
- Supports Lm sensor which can retrieve CPU and board temperature for monitoring purposes
- 8 x isolated RS-232/422/485 ports with automatic flow control
- 3 x 10/100Base-T RJ-45 ports
- Supports two USB and 1 x type I/II CF card
- Windows® CE 5.0 and Windows XP Embedded ready solution
- Windows 2000/XP driver ready and Linux driver support
- Windows XP Embedded (SP2) ready platform with write protection (EWF)
- Onboard system & I/O LED indicators
- Fanless design with no internal cabling

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## Introduction

UNO-4678 is high-performance Fanless Box PC, which supports a Celeron M 1 GHz CPU, and equipped with eight isolated serial communication ports. They inherit the glory from the UNO family and includes the typical characteristics as it is fanless, robust, and reliable. Furthermore, in order to meet the diverse applications in industrial automation and control, varied interfaces and 1U form factor are suitable for use, especially for rack mounting. Also, LEDs for all ports and modes on the front panel simplify the monitoring status for operation, administration and maintenance. UNO-4678 is convenient and user-friendly platforms to fulfill a wide range of requirements.

## Specifications

### General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 1U (440 x 220 x 44 mm/17.3" x 8.6" x 1.7")
- **Enclosure** SECC
- **Mounting** Rack mount
- **Power Consumption** 24 W (Typical)
- **Power Requirements** Min. 48 W (9 ~ 36 $V_{DC}$) (e.g +24 V @ 2 A), AT
- **Weight** 3.6 kg
- **OS Support** Windows XP Embedded, Windows 2000/XP, Windows CE 5.0, Linux

### System Hardware

- **CPU** Celeron M 1.0 GHz
- **Memory** 512 MB DDR SDRAM
- **Indicators** LEDs for Power, Power Input 1 & 2, Power fault, IDE, LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **Storage**
  - SSD: 1 x internal type I/II CompactFlash® slot
  - HDD: Built-in 2.5" SATA/IDE HDD bracket
- **Display** DB15 VGA connector 1600 x 1200 @ 85 Hz

### I/O Interface

- **Serial Ports** 8 x RS-232/422/485 ports include:
  - 2 x DB-9 connectors with 9-wired RS-232
  - 6 x screw terminals with 5-wired RS-232
  - Automatic RS-485 data flow control
  - 2000 $V_{DC}$ surge protection & 2000 $V_{DC}$ isolation
- **Serial Port Speed** RS-232: 50 ~ 230.4 kbps
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 3 x 10/100Base-T RJ-45 ports
- **USB Ports** 2 x USB, USB EHCI, Rev. 2.0 compliant

### Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** -10 ~ 50° C (14 ~ 122° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
  HDD: 0.5 Grms @ 5 ~ 500 Hz

## Ordering Information

- **UNO-4678-C11BE** Celeron M 1 GHz, 512 MB RAM Fanless Box PC

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# Accessories

## HDD Expansion Kit

**UNO-2000 HDD Expansion Kit**

- Dimensions: 188.8 x 106.5 x 21.0 mm (W x D x H) (Only extension kit)

### Supported Models

- UNO-2050E, UNO-2052E, UNO-2053E, UNO-2059E

### Packing List

- Extend chassis, 1 piece 12 cm IDE cable, post for assembly 2.5" HDD

### Ordering Information

- **UNO-HD20-AE** UNO-2000 series HDD expansion kit

## DIN-rail Expansion Kit

**UNO-2100 Series DIN-rail Kit**

- Supports DIN-rail mounting (EN50022, 35 mm X 7.5 mm)

### Supported Model List

- UNO model All UNO-2100 series

### Ordering Information

- **UNO-DIN21-AE** UNO-2100 series DIN-rail Kit

## UNO-3000 Mounting Kit

### Panel Mounting Kit

#### Supported Models

- UNO-3072L, UNO-3072, UNO-3074

#### Ordering Information

- **UNO-PM70-AE**
  Panel mounting kit for UNO-3000 series

### Stand Mounting Kit

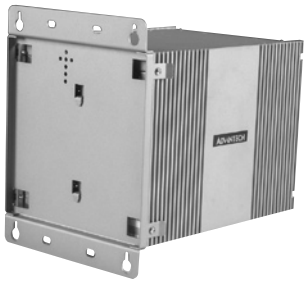
#### Supported Models

- UNO-3072L, UNO-3072, UNO-3074

#### Ordering Information

- **UNO-SM70-AE**
  Stand mounting kit for UNO-3000 series

### Wallmounting Kit for UNO-3074 Series



#### Supported Models

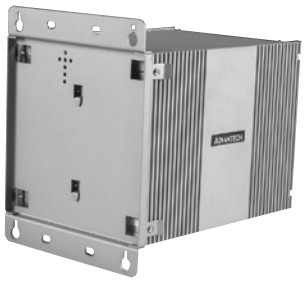
- **UNO-3074-P11E**

#### Ordering Information

- **UNO-WM74-AE**
  Wallmounting kit for UNO-3074-P11E

**Note:** For UNO-3074-P32E wall mount requirement, please use UNO-PM70-AE mounted on the back as a wallmount kit

### Wallmounting Kit for UNO-3072 Series



#### Supported Models

- UNO-3072L, UNO-3072

#### Ordering Information

- **UNO-WM72-AE**
  Wallmounting kit for UNO-3072L-C11E/UNO-3072-P11E

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# VESA Mounting Kit

### UNO-2000 Series VESA Mounting Kit

UNO-FPM21 could provide excellent integration of UNO and FPM models which could help installation easier and save more space in filed.

#### Features

- Dimensions: 271 x 163 x 12 mm (W x H x D) (Only extension kit)
- Supports VESA 75 and 100 monitor

#### Supported Models

- **UNO** All UNO-2000 series and UNO-2100 series
- **FPM** All FPM 12", 15", 17", 19" models

#### Ordering Information

- **UNO-FPM21-AE** UNO-2000 series VESA mount kit

### UNO-1100 Series VESA Mounting Kit

#### Features

- Dimensions: 271 x 163 x 12 mm (W x H x D) (Only extension kit)
- Supports VESA 75 and 100 monitor

#### Supported Models

- **UNO** All UNO-1100 series
- **FPM** All FPM 12", 15", 17", 19" models

#### Ordering Information

- **UNO-FPM11-AE** UNO-1100 series VESA mount kit

# UNO Series PC/104 Expansion Kit

### UNO-2100 Series PC/104 Expansion Kit

- Dimensions: 228 x 32 x 152 mm (W x H x D) (Only extension kit)
- Supports two PC/104 modules

#### Supported Model List

- **UNO-2170**
  This kit includes one solid panel, one "2 x DB-9" panel and one "4 x DB-9" panel

#### Ordering Information

- **UNO-PCM21-AE** 2 x PC/104 expansion kit for UNO-2170

- Dimensions: 228 x 32 x 152 mm (W x H x D) (Only extension kit)
- Supports two PC/104 modules

#### Supported Model List

- **UNO-2171, UNO-2172, UNO-2176, UNO-2182**
  This kit includes one solid panel, one "2 x DB-9" panel and one "4 x DB-9" panel

#### Ordering Information

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series

# UNO Series Power Adapter

#### Features:

- Input voltage: 90 ~ 264 $V_{AC}$, 47 ~ 63 Hz
- Output Voltage: 24 $V_{DC}$
- Operating Temperature: -20 ~ 70° C

Note: Need to order power cord separately

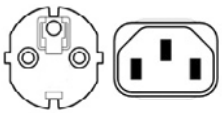
#### Ordering Information

- **1757002321** 63W AC to DC UNO series power adapter

# UNO Series Power Cord Options

**1702002600**
**Power Cable US Plug 1.8 M**

**1702031801**
**Power Cable UK Plug 1.8 M**



**1702002605**
**Power Cable EU Plug 1.8 M**

**1702031836**
**Power Cable China/Australia Plug 1.8 M**